

Docket No. 10015382-4

Remarks

This Amendment is responsive to the Final Office Action of June 13, 2006.
Reexamination and reconsideration of claims 1-8, 10-12, 14-15, 17-25 is respectfully requested.

Summary of The Office Action

Claims 1-3, 6-7 and 10-12, 14, 17-25 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Baughman et al. (US 5,441,593).

Claims 1-4, 6-7, 10-12, 14-18, 20-25 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Soik et al. (US 6,745,469 B1).

Claims 5 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Soik et al. (US 6,745,469 B1).

Response to Final Office Action

The Examiner states that she has broadly interpreted the claimed limitations of "terminal regions" and "ends of the slot" to read on the central portion of the slot 18a in Baughman, which likewise requires a broad interpretation of what Baughman discloses. The Office Action states on page 2, "...the end of the slot is shown as that at the upper end of the slot intersecting the top surface".

Looking to Figure 1 of Baughman, the upper end of the slot 18a at the top surface is at layer 26. The Examiner believes this is the "terminal region" and "end of the slot". However as seen in Figure 1, this region is constructed so that ink flows in nearly every direction. The ink flows into ink feed channel 14 along arrow "A" into chamber 15. The ink continues to flow upward to nozzle 20. The ink flows similarly on the other side of the slot 18a as shown in

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Figures 2b and 3. The ink also flows along the slot 18a to the left and right from the view of Figure 1. Looking at Figures 4D, 5D or 6D, the cross-section view shows the ink paths that lead upward and away from the slot 18a toward nozzles 20. Thus at the purported "terminal region" as asserted by the Examiner, ink flows in nearly every direction. It is clear that this is not a terminal region and is not the end of the slot as defined by the present claims. The interpretation of Baughman is also incorrect. Therefore, Baughman fails to disclose the claimed slot with each and every limitation as defined in each independent claim. The rejection cannot stand and must be withdrawn.

Furthermore, the interpretation used in the Office Action is not consistent with the claim language as a whole, is not a meaning that one of ordinary skill in the art would construe, and is not reasonable based on MPEP 2111.

MPEP 2111 instructs that claims must be given their "broadest reasonable interpretation" consistent with the specification, and not "broadly interpreted" as used in the Office Action. MPEP 2111 states:

"During patent examination, the pending claims must be "given *>their< broadest reasonable interpretation consistent with the specification." (MPEP 2111, first paragraph)

...The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (MPEP 2111, second paragraph)

One of ordinary skill would not construe "terminal regions" and "the end of the slot" to mean "at the central region of the slot". The claim language does not lead to this meaning and the meaning is not consistent with the specification. Furthermore, in view of a full understanding of Baughman as described above, the Office Action's reading of Baughman and the proposed interpretation is incorrect and improper.

As an analogy, consider the claimed slot as defining a city street. The street has a depth of concrete that defines a first (top) surface and a second (bottom) surface. The first surface is the top surface on which cars travel. Under the Examiner's interpretation, a terminal region or

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end of the street would be anywhere along the surface on the street (e.g. from the bottom surface to the top surface is considered the end). Common sense tells us that this interpretation is wrong and one of ordinary skill would not construe the meaning of "terminal" or "end" to have the proposed meaning. The end of the street is where the street ends just as the "end of the slot" is where the slot ends (e.g. at a terminal region).

See for example the specification Figure 5, terminal regions 503b and 503c, 504b and 504c, 505b and 505c at the ends of their slots. Applicant is not arguing that the limitations from Figure 5 are not disclosed by the art but cites to the figure to show examples of what is consistent with the specification. Interpreting the claims to be "consistent with the specification" (as MPEP 2111 requires) supports this "reasonable interpretation" as would be understood by one of ordinary skill.

Thus, the Examiner's interpretation is not the "broadest reasonable interpretation" according to MPEP 2111 and is not consistent with the interpretation that those skilled in the art would reach. Likewise with respect to the interpretation of Baughman, what the Examiner claims is a terminal region is not terminal at all.

Therefore, for these reasons, for the reasons set forth below and for the reasons previously submitted, Baughman fails to teach each and every limitation of the claims and fails to support a proper §102 rejection. The rejection cannot stand and must be withdrawn.

Non-Analogous Art

MPEP 2141.01(a) "Analogous and Non Analogous Art", section I states:

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

Soik is non-analogous art because its field of endeavor relates to a papermaking process and screens for filtering a wood pulp slurry (see Abstract, or Field of the Invention column 1,

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lines 13-18, or Summary of Invention column 3, lines 60). Applicant's field of endeavor is semiconductor substrate manufacturing for inkjet print heads. Furthermore, the problems associated with the papermaking process and pulp slurry are not reasonably pertinent to semiconductor substrate fabrication or inkjet systems that involve highly accurate and precise delivery of drops of ink. Soik is thus non-analogous art and should be removed as a reference.

Ascertaining Skill Level of One Skilled In The Art

The MPEP requires that the Office Action ascertain and describe the level of ordinary skill so that objectivity can be maintained. MPEP §2141.03 reads:

The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry. *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718, 21 USPQ2d 1053, 1057 (Fed. Cir. 1991). The examiner must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984).

Here the Office Action neither ascertains nor reports on the level of ordinary skill in the art. This is especially important in view of the applied reference of Soik, which relates to a papermaking process and wood slurries. If the Examiner maintains Soik as analogous art, which it is not, then level of ordinary skill in the art must be ascertained. The skill level has not been ascertained. For this additional reason the rejections are improper and should be withdrawn.

The Claims Patentably Distinguish Over the References of Record

Independent Claim 20

Claim 20 recites:

"forming two terminal regions of the slot into the first surface generally contiguous with and interposed by the central region, each of the two terminal regions having a width at the first surface taken generally orthogonal to a long axis of the slot that is greater than a width of the central region at the first surface taken generally orthogonal to the long axis of the slot."

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As one example, the present application in Figure 5 shows a slot 503 with a central portion 503a and two terminal regions 503b and 503c formed into the first surface 310b. The terminal regions 503b and 503c have a width that is greater than the central region 503a of the slot 503 at the first surface 310b. This figure may assist in visualizing an example of what can be formed by the claimed method.

Applicant respectfully submits that Baughman fails to disclose terminal regions of its slot 18, and fails to illustrate any terminal regions of its slot 18. Therefore, Baughman fails to support the §102 rejection and the rejection must be withdrawn. In particular, all figures in Baughman illustrate a cut-out portion of the slot 18 and a slot extension region 18a. Terminal regions formed in a first surface (as recited in claim 20) would be formed at the ends of the slot region 18a but as clearly seen in Baughman, the ends of the slot region 18a are not illustrated. Figures 4-6 show a cross-section of the central portion of the slot, not the ends. Thus, the formed terminal regions as recited in claim 20 are not disclosed by Baughman.

The Office Action cites Baughman Figures 5C and 6C and identifies sidewalls of slot 18a and sidewalls 18'. Applicant submits that sidewalls 18' are internal to the substrate and thus do not meet the claimed limitation of "a width at the first surface". If the sidewalls of slot 18a are deemed to be at the first surface of the substrate, then sidewalls 18' are clearly not "at the first surface." As such, Baughman fails to disclose forming two terminal regions as claimed and fails to disclose the terminal regions having a width at the first surface that is greater than a width of the central region of the slot at the first surface as recited in claim 20.

Therefore, since each and every limitation of claim 20 is not taught by Baughman, Baughman fails to establish a proper §102 rejection and the rejection must be withdrawn. Claim 20 is thus in condition for allowance. Accordingly, dependent claims 21-25 also patentably distinguish over the references and are in condition for allowance.

Regarding the Soik patent, Soik (which is non-analogous art) also fails to teach or suggest the claimed limitations of forming terminal regions at the first surface that have a width greater than a width of the central region of the slot at the first surface. The Office Action cites

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Figure 21 of Soik and contour cut 310, back groove 308, and end wall 400. However, contour cut 310 is not a terminal region as claimed. Furthermore, back groove 308 and end wall 400 are not "at the first surface" as recited in claim 20. The claimed first surface represents the relationship between the terminal regions and the slot central region. Instead, Soik shows a surface-view illustration in Figures 6 and 11. As illustrated, the ends of groove 208 (fig. 6) or groove 308 (fig. 11) do not have formed terminal regions that are wider than a central region.

Therefore, Soik fails to teach or suggest the recited limitations of claim 20 and fails to support the §102 rejection. Thus, the rejection must be withdrawn. For these additional reasons, claim 20 patentably distinguishes over the references of record and is in condition for allowance.

Accordingly, dependent claims 21-25 also patentably distinguish over the references and are in condition for allowance.

Independent Claim 1

Claim 1 recites forming at least one bowl-shape into the substrate so that the long axis passes therethrough, the bowl shape being connected to the pair of sidewalls of the slot and defining, at least in part, a terminal region at an end of the slot.

Based on the explanations above, Baughman fails to disclose terminal regions of its slot 18, and fails to illustrate any terminal regions of its slot 18. The central portions from Figure 1 as cited by the Office Action are not terminal regions since ink flows in nearly every direction. As explained above, this is not a terminal region and Baughman fails to teach the claimed limitations. Therefore, Baughman fails to support the §102 rejection and the rejection must be withdrawn. Baughman does not discuss or illustrate regions at the ends of the slot 18 and thus does not teach forming a bowl-shape that defines a terminal region at an end of the slot as recited in claim 1.

Likewise, based on the explanations of Soik, Soik fails to teach or suggest forming a bowl-shape that defines a terminal region at an end of the slot as recited in claim 1.

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Since claim 1 recites features not taught or suggested by the references, claim 1 patentably distinguishes over the references. Accordingly, dependent claims 2-8 also patentably distinguish over the references and are in condition for allowance.

Dependent Claim 2

Dependent claim 2 recites forming at least one bowl shape into the first surface of the substrate, and wherein the at least one bowl shape has a width at the first surface measured generally orthogonal to the long axis that is greater than a width at the first surface measured generally orthogonal to the long axis between the pair of sidewalls. Neither of the references show the claimed limitation of "a width at the first surface". As described with reference to claim 20 above, the references show sidewalls that are internal within the substrate and are not at the first surface. Thus, the rejection is not supported.

Accordingly, dependent claim 2 distinguishes over the references and is in condition for allowance for this additional reason.

Independent Claim 10

Claim 10 recites forming a fluid-feed slot where the terminal region is wider at the first surface than the central region. As explained above, neither Baughman nor Soik teach or suggest forming the claimed terminal region at the first surface that is wider than the central region of the slot.

Therefore, both Baughman and Soik fail to teach or suggest the recited limitations of claim 10 and fail to support the §102 rejections. Thus, the rejections must be withdrawn. For these reasons, claim 10 patentably distinguishes over the references of record and is in condition for allowance.

Accordingly, dependent claims 11-12 also patentably distinguish over the references and are in condition for allowance.

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Independent Claim 14

Claim 14 recites forming a fluid-feed slot where the fluid-feed slot having a cross-section at the first surface and taken generally parallel the first surface comprising a narrower central region positioned between two wider terminal regions. As explained above, neither Baughman nor Soik teach or suggest forming the claimed terminal region at the first surface. The side walls of the slot and the alleged terminal region cited by the Office Action (from both Baughman and Soik) are not both at the first surface.

Therefore, both Baughman and Soik fail to teach or suggest the recited limitations of claim 14 and fail to support the §102 rejections. Thus, the rejections must be withdrawn. For these reasons, claim 14 patentably distinguishes over the references of record and is in condition for allowance.

Accordingly, dependent claim 15 also patentably distinguishes over the references and is in condition for allowance.

Independent Claim 18

Claim 18 recites forming a slot having a central region and at least one terminal region, the at least one terminal region being formed at an end of the slot and having a bowl-shape. As explained above, neither Baughman nor Soik teach or suggest forming the claimed terminal region at an end of the slot. Baughman fails to discuss and does not illustrate "ends" of the slot 18a. Soik illustrates ends of its grooves but fails to teach or suggest a bowl-shaped terminal region as claimed.

Therefore, both Baughman and Soik fail to teach or suggest the recited limitations of claim 18 and fail to support the §102 rejections. Thus, the rejections must be withdrawn. For these reasons, claim 18 patentably distinguishes over the references of record and is in condition for allowance.

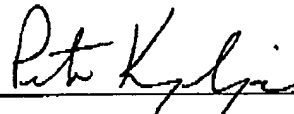
Accordingly, dependent claim 17 and 19 also patentably distinguish over the references and are in condition for allowance.

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Conclusion

For the reasons set forth above, claims 1-8, 10-12, 14-15, and 17-25 patentably and unobviously distinguish over the references of record and are now in condition for allowance. An early allowance of all claims is earnestly solicited.

Respectfully submitted,



PETER KRAGULJAC (Reg. No. 38,520)

(216) 348-5843

McDonald Hopkins Co., LPA
600 Superior Avenue, E.
Suite 2100
Cleveland, OH 44114